

General

Guideline Title

Preventive activities prior to pregnancy. In: Guidelines for preventive activities in general practice, 8th edition.

Bibliographic Source(s)

Preventive activities prior to pregnancy. In: Guidelines for preventive activities in general practice, 8th edition. East Melbourne (Australia): Royal Australian College of General Practitioners; 2012. p. 11-3.

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

The levels of evidence (I-IV, Practice Point) and grades of recommendations (A-D) are defined at the end of the "Major Recommendations" field.

Every woman aged 15 to 49 years should be considered for pre-conception care (C). Pre-conception care is a set of interventions that aim to identify and modify biomedical, behavioural and social risks to a woman's health or pregnancy outcome through prevention and management (Johnson et al., 2006). This should include smoking cessation (A) (Lumley et al., 2009) and advice to consider abstinence from alcohol (especially in the early stages of pregnancy) (National Health and Medical Research Council [NHMRC], 2009), folic acid and iodine supplementation (A) (Lumley et al., 2001; NHMRC, 2010), review of immunisation status (C) (NHMRC, 2008), medications (B) (Australian Drug Evaluation Committee, 1999) and chronic medical conditions, especially glucose control in patients with diabetes (B) (Korenbroet et al., 2002).

There is evidence to demonstrate improved birth outcomes with pre-conception healthcare in women with diabetes, phenylketonuria and nutritional deficiency (Gjerdingen & Fontaine, 1991) as well as benefit from the use of folate supplementation and a reduction in maternal anxiety (de Jong-Potjer et al., 2006). The information below lists all the potential interventions that have been recommended by expert groups in pre-conception care (C).

What Does Pre-conception Care Include?

Medical Issues

Reproductive Life Plan

Assist your patient in developing a reproductive life plan that includes whether they want to have children. If they do, discuss the number, spacing and timing of intended children.

Reproductive History

Ask if there have been any problems with previous pregnancies such as infant death, foetal loss, birth defects particularly neural tube defects (NTD), low birthweight, pre-term birth or gestational diabetes. Are there any ongoing risks that could lead to a recurrence in a future pregnancy?

Medical History

Ask if there are any medical conditions that may affect future pregnancies. Are chronic conditions such as diabetes, thyroid disease, hypertension, epilepsy and thrombophilia well managed?

Medication Use

Review all current medications including over-the-counter medications, vitamins and supplements.

Genetic/Family History

Assess risk of chromosomal or genetic disorders (e.g., cystic fibrosis [CF], fragile X, Tay-Sachs disease, thalassaemia, sickle cell anaemia and spinal muscular atrophy), by collection of data on family history and ethnic background. Provide opportunity for carrier screening for these and other more common genetic conditions.

General Physical Assessment

Conduct Pap test and breast examinations before pregnancy if indicated or due. Also assess body mass index (BMI), and blood pressure (BP) and ask about periodontal disease.

Substance Use

Ask about tobacco, alcohol and illegal drug use.

Vaccinations

Vaccinations can prevent some infections that may be contracted during pregnancy. If previous vaccination history or infection is uncertain, testing should be undertaken to determine immunity to varicella and rubella. Women receiving live viral vaccines such as measles, mumps and rubella (MMR) and varicella should be advised against becoming pregnant within 28 days of vaccination. Recommended vaccinations are:

- MMR
- Varicella (in those without a clear history of chickenpox or who are non-immune on testing)
- Influenza (recommended during pregnancy to protect against infection if in second or third trimester during influenza season)
- Diphtheria, tetanus, acellular pertussis (dTpa) (to protect newborn from pertussis)

Lifestyle Issues

Family Planning

Based on the patient's reproductive life plan (see above), discuss fertility awareness and how fertility reduces with age, chance of conception, and risk of infertility and foetal abnormality. For patients not planning to become pregnant, discuss effective contraception and emergency contraceptive options.

Folic Acid Supplementation

Women should take a 0.4 to 0.5 mg supplement of folic acid per day for at least 1 month prior to pregnancy, and for the first 3 months after conception. In women at high risk (i.e., with a reproductive or family history of NTD, women who have had a previous pregnancy affected by NTD, women on anti-epileptics and women who have diabetes) the dose should be increased to 5 mg per day.

Healthy Weight, Nutrition and Exercise

Discuss weight management and caution against being overweight or underweight. Recommend regular, moderate-intensity exercise and assess risk of nutritional deficiencies (e.g., vegan diet, lactose intolerance, calcium or iron and vitamin D deficiency due to lack of sun exposure).

Psychosocial Health

Provide support and identify coping strategies to improve your patient's emotional health and wellbeing.

Smoking, Alcohol and Illegal Drug Cessation (as Indicated)

Smoking, illegal drug and excessive alcohol use during pregnancy can have serious consequences for an unborn child and should be stopped prior to conception.

Healthy Environments

Repeated exposure to hazardous toxins in the household and workplace environment can affect fertility and increase the risk of miscarriage and birth defects. Discuss the avoidance of TORCH infections: Toxoplasmosis, Other – such as syphilis, varicella, mumps, parvovirus and human immunodeficiency virus (HIV) – Rubella, Cytomegalovirus, Herpes simplex.

- Toxoplasmosis: avoid cat litter, garden soil, raw/undercooked meat and unpasteurised milk products, and wash all fruit and vegetables.
- Cytomegalovirus, parvovirus B19 (fifth disease): discuss importance of frequent handwashing, and child and healthcare workers further reducing risk by using gloves when changing nappies.
- Listeriosis: avoid paté, soft cheeses (feta, brie, blue vein), pre-packaged salads, deli meats and chilled/smoked seafood. Wash all fruit and vegetables before eating. Refer to the [Australian food standards](#) regarding folate, listeria and mercury.
- Fish: limit fish containing high levels of mercury.

Pre-conception: Preventive Interventions

Intervention	Technique	References
Folate supplementation	High-risk women: 5 mg/day supplementation ideally beginning at least 1 month prior to conception and for first trimester. Most women: 0.5 mg/day supplementation ideally beginning at least 1 month prior to conception and for first trimester.	Lumley et al, 2001; US Preventive Services Task Force, 2004; Wilson et al., 2007; National Collaborating Centre for Women's and Children's Health, 2008
Iodine supplementation	All women who are pregnant, breastfeeding or considering pregnancy should take an iodine supplement of 150 micrograms (µg) each day.	National Health and Medical Research Council (NHMRC), 2010
Smoking cessation	Women should be informed that tobacco affects foetal growth and all women should be advised to stop smoking. Evidence exists to suggest improved cognitive ability in children of mothers who quit smoking during gestation (III,A). Pharmacotherapy should be considered when a pregnant woman is otherwise unable to quit, and when the likelihood and benefits of cessation outweigh the risks of pharmacotherapy and potential continued smoking.	Zwar et al, 2011
Alcohol and illicit drug use	For women who are pregnant or planning a pregnancy, not drinking is the safest option. The risk of harm to the foetus is highest when there is high, frequent, maternal alcohol intake. The risk of harm to the foetus is likely to be low if a woman has consumed only small amounts of alcohol before she knew she was pregnant. Women should be informed that illicit drugs may harm foetuses and advised to avoid use.	NHMRC, 2009
Interpregnancy interval	There are worse perinatal outcomes with interpregnancy intervals <18 months or >59 months, namely preterm birth, low birthweight and small for gestational age.	Conde-Agudelo, Rosas-Bermúdez, & Kafury-Goeta, 2006
Chronic diseases	Optimise control of existing chronic diseases (e.g., diabetes, hypertension, epilepsy). Avoid teratogenic medications.	National Collaborating Centre for Women's and Children's Health, 2008
Pre-conception care resources for general practitioners (GP) and	Address risk factors using Pregnancy Lifescripts (resources are in process of being updated in 2012).	

patients Intervention	Technique	References
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Definitions:

Levels of Evidence

Level	Explanation
I	Evidence obtained from a systematic review of level II studies
II	Evidence obtained from a randomised controlled trial (RCT)
III–1	Evidence obtained from a pseudo-randomised controlled trial (i.e., alternate allocation or some other method)
III–2	Evidence obtained from a comparative study with concurrent controls: <ul style="list-style-type: none"> • Non-randomised, experimental trial • Cohort study • Case–control study • Interrupted time series with a control group
III–3	Evidence obtained from a comparative study without concurrent controls: <ul style="list-style-type: none"> • Historical control study • Two or more single arm study • Interrupted time series without a parallel control group
IV	Case series with either post-test or pre-test/post-test outcomes
Practice Point	Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees

Grades of Recommendations

Grade	Explanation
A	Body of evidence can be trusted to guide practice
B	Body of evidence can be trusted to guide practice in most situations
C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
D	Body of evidence is weak and recommendation must be applied with caution

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

- Pre-conception
- Any disease or biomedical, behavioural, or social condition that is a risk to a woman's health or pregnancy outcome, including chronic diseases such as diabetes, thyroid disease, hypertension, epilepsy and thrombophilia

Guideline Category

Counseling

Management

Prevention

Risk Assessment

Screening

Clinical Specialty

Family Practice

Internal Medicine

Obstetrics and Gynecology

Preventive Medicine

Intended Users

Advanced Practice Nurses

Health Care Providers

Nurses

Physician Assistants

Physicians

Public Health Departments

Guideline Objective(s)

- To facilitate evidence-based preventive activities, prior to pregnancy, in primary care
- To provide a comprehensive and concise set of recommendations for patients in general practice with additional information about tailoring risk and need
- To provide the evidence base for which primary healthcare resources can be used efficiently and effectively while providing a rational basis to ensure the best use of time and resources in general practice

Target Population

Australian women aged 15 to 49 years

Interventions and Practices Considered

1. Developing a reproductive life plan
2. Assessment of reproductive history (e.g., problems with previous pregnancies, ongoing risk)
3. Assessment of medical history (e.g., chronic conditions such as diabetes, thyroid disease, hypertension, epilepsy and thrombophilia)
4. Review of current medication use
5. Assessment of genetic/family history
6. General physical assessment (e.g., Pap test and breast examination, body mass index [BMI], blood pressure [BP], and asking about

- periodontal disease)
7. Asking about tobacco, alcohol and illegal drug use
 8. Ensuring appropriate vaccinations (measles, mumps, rubella [MMR]; varicella; influenza; diphtheria, tetanus, acellular pertussis [dTpa])
 9. Advice on family planning
 10. Folic acid and iodine supplementation
 11. Counselling on maintaining healthy weight, nutrition and exercise
 12. Providing support and identifying coping strategies to improve patient's emotional health and wellbeing
 13. Smoking, alcohol and illegal drug cessation (as indicated)
 14. Advice on maintaining a healthy environment (avoiding household/workplace toxins; avoiding infections)

Major Outcomes Considered

- Perinatal outcomes
- Risk of foetal harm
- Maternal anxiety
- Rate of folic acid supplement use

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Sources of Recommendations

The recommendations in these guidelines are based on current, evidence-based guidelines for preventive activities. The Taskforce focused on those most relevant to Australian general practice. Usually this means that the recommendations are based on Australian guidelines such as those endorsed by the National Health and Medical Research Council (NHMRC).

In cases where these are not available or recent, other Australian sources have been used, such as guidelines from the Heart Foundation, Canadian or United States preventive guidelines, or the results of systematic reviews. References to support these recommendations are listed. However, particular references may relate to only part of the recommendation (e.g., only relating to one of the high-risk groups listed) and other references in the section may have been considered in formulating the overall recommendation.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Levels of Evidence

Level	Explanation
I	Evidence obtained from a systematic review of level II studies
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IV	Case series with either post-test or pre-test/post-test outcomes
Practice Point	Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees

Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

These *Guidelines for preventive activities in general practice*, 8th edition, have been developed by a taskforce of general practitioners (GPs) and experts to ensure that the content is the most valuable and useful for GPs and their teams. The guidelines provide an easy, practical and succinct resource. The content broadly conforms to the highest evidence-based standards according to the principles underlying the Appraisal of Guidelines Research and Evaluation.

The dimensions addressed are:

- Scope and purpose
- Clarity of presentation
- Rigour of development
- Stakeholder involvement
- Applicability
- Editorial independence

The Red Book maintains developmental rigour, editorial independence, relevance and applicability to general practice.

Screening Principles

The World Health Organization (WHO) has produced guidelines for the effectiveness of screening programs. The Taskforce has kept these and the United Kingdom National Health Services' guidelines in mind in the development of recommendations about screening and preventive care.

Rating Scheme for the Strength of the Recommendations

Grades of Recommendations

Grade	Explanation
A	Body of evidence can be trusted to guide practice
B	Body of evidence can be trusted to guide practice in most situations
C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
D	Body of evidence is weak and recommendation must be applied with caution

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Peer Review

Description of Method of Guideline Validation

Not stated

Evidence Supporting the Recommendations

References Supporting the Recommendations

Australian Drug Evaluation Committee, Medicines in Pregnancy Working Party, Therapeutic Goods Administration (Australia), Australian Drug Evaluation Committee, Medicines in Pregnancy Working Party, Commonwealth Department of Health and Aged Care. Prescribing medicines in pregnancy: an Australian categorisation of risk of drug use in pregnancy. 4th ed. Canberra: Therapeutic Goods Administration; 1999.

Conde-Agudelo A, Rosas-Bermudez A, Kafury-Goeta AC. Birth spacing and risk of adverse perinatal outcomes: a meta-analysis. JAMA. 2006 Apr 19;295(15):1809-23. [PubMed](#)

de Jong-Potjer LC, Elsinga J, le Cessie S, van der Pal-de Bruin KM, Neven AK, Buitendijk SE, Assendelft WJ. GP-initiated preconception counselling in a randomised controlled trial does not induce anxiety. BMC Fam Pract. 2006;7:66. [PubMed](#)

Gjerdingen DK, Fontaine P. Preconception health care: a critical task for family physicians. J Am Board Fam Pract. 1991 Jul-Aug;4(4):237-50. [88 references] [PubMed](#)

Johnson K, Posner SF, Biermann J, Cordero JF, Atrash HK, Parker CS, Boulet S, Curtis MG, CDC/ATSDR Preconception Care Work Group, Select Panel on Preconception Care. Recommendations to improve preconception health and health care--United States. A report of

the CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care. MMWR Recomm Rep. 2006 Apr 21;55(RR-6):1-23. [195 references] [PubMed](#)

Korenbrot CC, Steinberg A, Bender C, Newberry S. Preconception care: a systematic review. Matern Child Health J. 2002 Jun;6(2):75-88. [66 references] [PubMed](#)

Lumley J, Chamberlain C, Dowswell T, Oliver S, Oakley L, Watson L. Interventions for promoting smoking cessation during pregnancy. Cochrane Database Syst Rev. 2009;(3):CD001055. [PubMed](#)

Lumley J, Watson L, Watson M, Bower C. Periconceptual supplementation with folate and/or multivitamins for preventing neural tube defects. Cochrane Database Syst Rev. 2001;(3):CD001056. [49 references] [PubMed](#)

National Collaborating Centre for Women's and Children's Health. Diabetes in pregnancy. Management of diabetes and its complications from pre-conception to the postnatal period. London (UK): National Institute for Health and Clinical Excellence (NICE); 2008 Mar. 21 p. (Clinical guideline; no. 63).

National Health and Medical Research Council. Australian guidelines to reduce health risks from drinking alcohol. Canberra: NHMRC; 2009.

National Health and Medical Research Council. Australian immunisation handbook. 9th ed. Canberra: NHMRC; 2008.

National Health and Medical Research Council. Iodine supplementation for pregnant and breastfeeding women. [internet]. Canberra: NHMRC; 2010 [accessed 2011 Jun 01].

US Preventive Services Task Force. Guide to clinical preventive services. 2nd ed. Washington (DC): Office of Disease Prevention and Health Promotion; 2004.

Wilson RD, Johnson JA, Wyatt P, Allen V, Gagnon A, Langlois S, Blight C, Audibert F, Desilets V, Brock JA, Koren G, Goh YI, Nguyen P, Kapur B, Genetics Committee of the Society of Obstetricians and Gynaecologists of Canada. Pre-conceptual vitamin/folic acid supplementation 2007: the use of folic acid in combination with a multivitamin supplement for the prevention of neural tube defects and other congenital anomalies. J Obstet Gynaecol Can. 2007 Dec;29(12):1003-13. [99 references] [PubMed](#)

Zwar N, Richmond R, Borland R, Peters M, Litt J, Bell J, et al. Supporting smoking cessation: a guide for health professionals. South Melbourne: RACGP; 2011.

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for selected recommendations (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Improved birth outcomes with pre-conception healthcare, particularly in women with diabetes, phenylketonuria, and nutritional deficiency

Potential Harms

Not stated

Qualifying Statements

Qualifying Statements

- The information set out in this publication is current at the date of first publication and is intended for use as a guide of a general nature only and may or may not be relevant to particular patients or circumstances. Nor is this publication exhaustive of the subject matter. Persons implementing any recommendations contained in this publication must exercise their own independent skill or judgement or seek appropriate professional advice relevant to their own particular circumstances when so doing. Compliance with any recommendations cannot of itself guarantee discharge of the duty of care owed to patients and others coming into contact with the health professional and the premises from which the health professional operates.
- Whilst the text is directed to health professionals possessing appropriate qualifications and skills in ascertaining and discharging their professional (including legal) duties, it is not to be regarded as clinical advice and, in particular, is no substitute for a full examination and consideration of medical history in reaching a diagnosis and treatment based on accepted clinical practices.
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- These guidelines have not included detailed information on the management of risk factors or early disease (e.g., what medications to use in treating hypertension). Similarly, they have not made recommendations about tertiary prevention (preventing complications in those with established disease). Also, information about prevention of infectious diseases has been limited largely to immunisation and some sexually transmitted infections (STIs).

Implementation of the Guideline

Description of Implementation Strategy

For preventive care to be most effective, it needs to be planned, implemented and evaluated. Planning and engaging in preventive health is increasingly expected by patients. The Royal Australian College of General Practitioners (RACGP) thus provides the Red Book and *National guide to inform evidence-based guidelines*, and the Green Book (see the "Availability of Companion Documents" field) to assist in development of programs of implementation. The RACGP is planning to introduce a small set of voluntary clinical indicators to enable practices to monitor their preventive activities.

Implementation Tools

Chart Documentation/Checklists/Forms

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Preventive activities prior to pregnancy. In: Guidelines for preventive activities in general practice, 8th edition. East Melbourne (Australia): Royal Australian College of General Practitioners; 2012. p. 11-3.

Adaptation

This guideline has been partially adapted from Australian, Canadian, United Kingdom and/or United States preventive guidelines.

Date Released

2012

Guideline Developer(s)

Royal Australian College of General Practitioners - Professional Association

Source(s) of Funding

Royal Australian College of General Practitioners

Guideline Committee

Red Book Taskforce

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Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the [Royal Australian College of General Practitioners \(RACGP\) Web site](#)

Availability of Companion Documents

The following are available:

- Preventive activities over the lifecycle – adults. Preventive activities over the lifecycle – children. Electronic copies: Available in Portable Document Format (PDF) from the [Royal Australian College of General Practitioners \(RACGP\) Web site](#) .
- Putting prevention into practice (green book). East Melbourne (Australia): Royal Australian College of General Practitioners; 2006. 104 p. Electronic copies: Available in PDF from the [RACGP Web site](#) .
- National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people. East Melbourne (Australia): Royal Australian College of General Practitioners; 2012. 100 p. Electronic copies: Available in PDF from the [RACGP Web site](#) .

Patient Resources

None available

NGC Status

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